Policy & Procedure (P& P)

Policy Title :		
Blood Components Preparation using REVEOS Automated Blood Processing System		
Department	**Index No.**	**Scope**
Laboratory & Blood Bank	LAB-056	All Blood Bank staff
Issue Date	**Revision NO**	**Effective Date**
1432/06/10	1	1440/08/23
Review Due Date	**Related Standard NO.**	**Page Number#**
1442/08/23	CBAHI (LB. 42)	11

01. Policy:

01.1. Donor whole blood is collected in quadruple bags specific for the REVEOS centrifuge: Reveos Automated Blood Processing System.

01.2. Packed Red blood cells, platelets and fresh frozen plasma are prepared at the same time from freshly collected whole blood using the REVEOS centrifuge within the first 6-8 hours after collecting.

02. Definition :

REVEOS centrifuge: blood processing automated machine

03. Purpose :

Separation of a single whole blood unit to its components to benefit more than one patient.

04. Procedure :

Turning on the Reveos Device

Note: It is recommended that you activate the cooled water source before powering on the device.

1. Make sure that the proper power cord is attached to the device and plugged into the appropriate power source.
2. Ensure that all buckets and line sensors are empty.
3. Turn on the device by pressing the power switch on the upper-right side of the device. Once the device completes the startup process it displays the system splash screen.

Loading a Blood Bag Set

Perform the following steps to load the blood bag sets into the Reveos device:

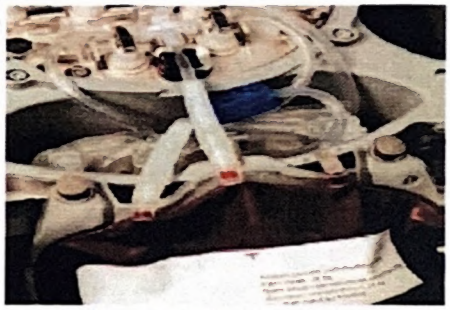
1. Separate the whole blood bag from the tubing set organizer.

2. Close the RBC filtration line clamp on the blood bag set.
3. Place the bags and filter that are attached to the organizer into the blood component bag holder. Ensure that the tubing is not kinked or twisted.

4. Insert the whole blood bag into the corresponding bucket with the label facing toward you.

Note: Gently press the whole blood bag downward to ensure that it is firmly seated in the bucket.

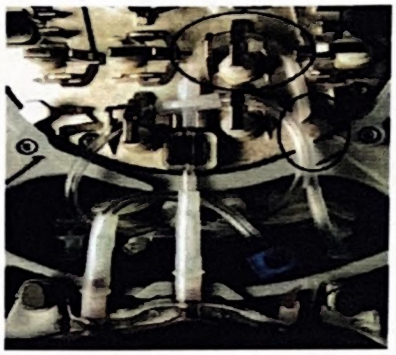
5. Secure the whole blood bag by placing both bag loops onto the corresponding bag posts.



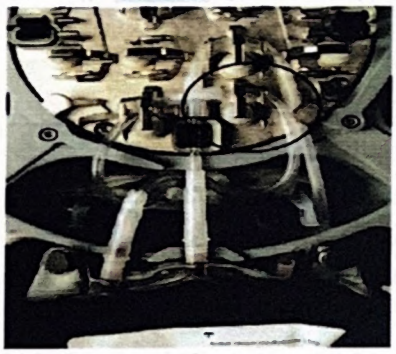
6. Load the tubing between the frangible connector and the cross-connector into the line sensor. You can use a flossing motion or press the line into the sensor to properly load the tubing.

7. Load the bottom portion of the cross-connector into the channel guide directly above the line sensor. The cross-connector is correctly loaded when it is flush against the line sensor.

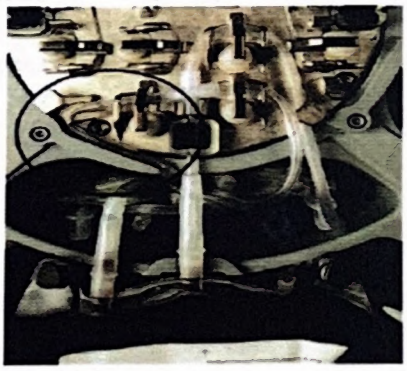
8. Load the residual leukocyte line through the residual leukocyte valve and channel guides.



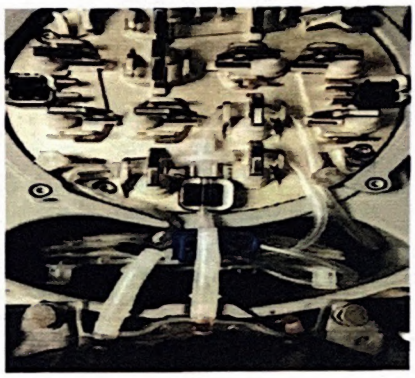
9. Load the plasma line through the plasma valve and channel guides.



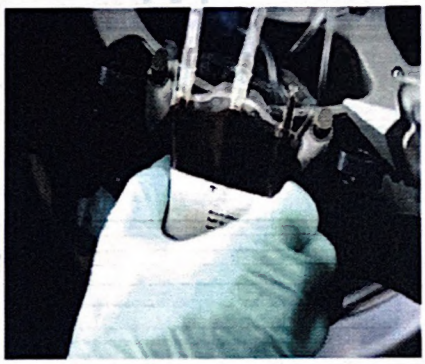
10. Load the platelet line through the platelet valve, channel guides, and platelet line router.



11. Ensure that the whole blood line is completely inserted into the line sensor.
12. Visually inspect the tubing to ensure that all lines are loaded properly into their respective channels.



13. Gently squeeze both sides of the whole blood bag before closing the bucket lid to ensure that the whole blood bag does not interfere with the bucket-lid latch.



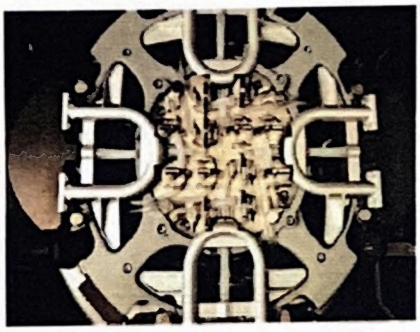
14. Close and latch the bucket lid ensuring that all frangible connectors are aligned. When frangible connectors are aligned properly; the bucket lid will close easily. After the bucket lid is latched, the bucket quadrant on the touch-screen display turns green.

15. Manually turn the rotor one-quarter turn to load the next blood bag set.

16. Repeat steps 1 through 15 to load the next bucket.

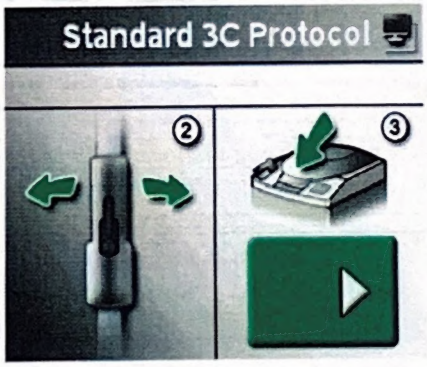
Note: If you are loading fewer than four blood bag sets, scan and load a counterbalance bag into each of the remaining empty buckets.

17. Ensure that you have completely loaded all four buckets before you continue to step 18.



18. Touch the **Close Valves** button on the Loading screen to close all valves.

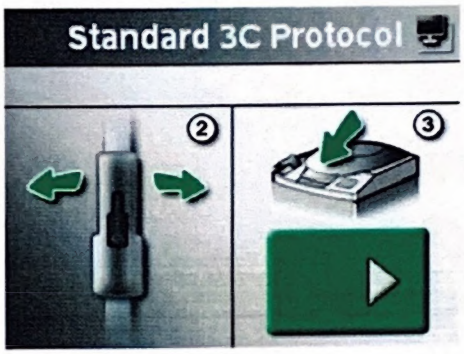
The system displays the Start Procedure screen, which prompts you to break the frangible connectors.



19. Break the frangible connector below the cross-connector on the processing line tubing of each blood bag set. Ensure that frangible connectors are completely broken.

20. Visually inspect the centrifuge basin and remove any loose objects.

21. Close the outer lid until it is latched. After you close the outer lid, the **Start Procedure** button becomes active.

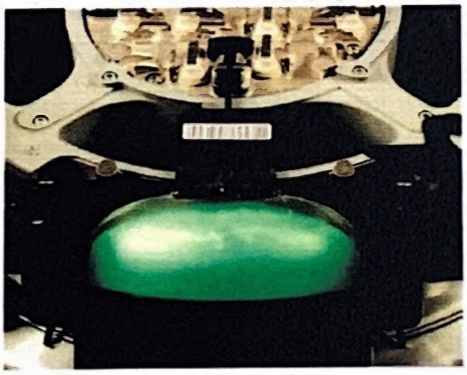


Loading a Counterbalance Bag

All four buckets must be loaded before running a procedure. If you do not have four whole blood units to process, you must fill each remaining empty bucket with a counterbalance bag. When loading two counterbalance bags, load them opposite each other in the centrifuge, either in buckets 1 and 3 or in buckets 2 and 4. Complete the following steps to load a counterbalance bag:

Note: You must scan the counterbalance bag before closing the bucket.

1. Insert the counterbalance bag into the bucket.
2. Press the horizontal end of the tubing into the channel guide directly above the line sensor.
3. Press the tubing into the line sensor.

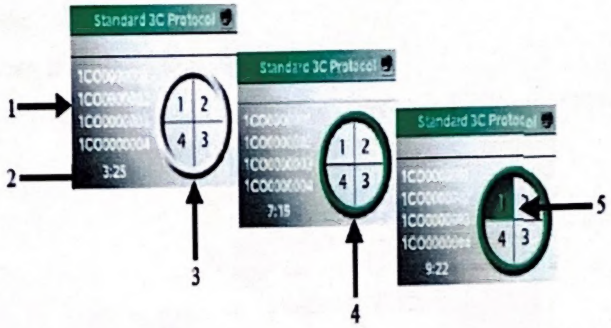


4. Close and latch the bucket lid.
5. Repeat steps 1 through 4 to fill any additional empty buckets.

Monitoring the Progress of a Procedure

After the procedure begins, the system monitors the amount of time it takes to complete the procedure.

The Procedure Progress screen updates periodically until the end of the procedure.

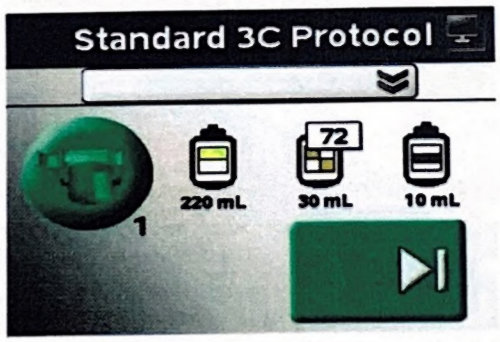


1. These numbers represent the Donation ID of each unit within each bucket. If a Donation ID number is not shown, then the bucket has a counterbalance bag loaded, or a Donation ID barcode was not scanned when the bucket was loaded.
2. The time stamp shows the amount of time that has elapsed since the procedure began.
3. The white ring icon tells the operator that the blood components are being separated in the whole blood bag.
4. The green ring tells the operator that the bulk expression of the hydraulic fluid is complete.
5. When the quadrant turns green, it means that expression is complete in that quadrant.

Ending a Procedure

At the end of the procedure, 3 components are separated: PRBCs, Platelets and Plasma

When a procedure is complete, the system seals the lines and resets the hydraulic pump. The primary End of Run Summary screen appears on the touch-screen display, but is inactive until a bucket is opened. Each bucket has its own End of Run Summary screen that becomes active when the corresponding bucket is opened. This screen shows the estimated product volumes for the bucket number listed beneath the green or yellow bucket icon.

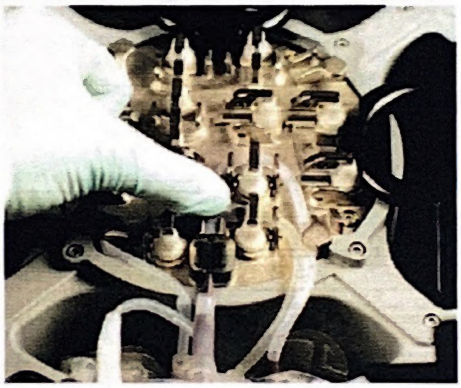


Unloading a Blood Bag Set

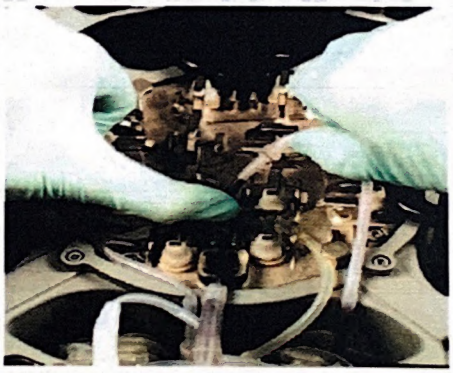
After the device completes the procedure, the outer lid automatically opens. The End of Run Summary screen

appears for each bucket when it is opened.

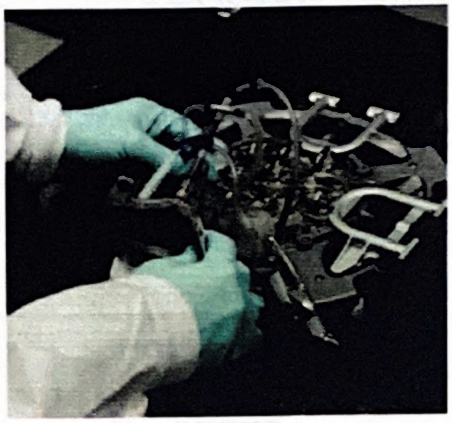
1. Open one of the bucket lids.
2. Release the whole blood bag from the bag posts.
3. Press the ridge of the cross-connector away from the line sensor to loosen the tubing from the valves.



4. Gently pull on the residual leukocyte line while continuing to press the cross-connector away from the line sensor.



5. Remove the lines from the valves and channel guides.
6. Gently lift the cross-connector and tubing out of the valves as you lift the bags up and out of the bucket and blood component bag holder.



7. Repeat steps 1 through 6 to remove the remaining blood bag sets.

8. Touch the green Next Procedure button to prepare for the next procedure.

Addition of SAGM and LEUKODEPLETION

- Additive red cell preservative of 100ml volume additive solution" SAGM is added to PRBC.
- The final hematocrit after addition of additive solution" SAGM or ADSOL" is about 65%.
- Hang the bag for leukodepletion.

05. Responsibilities :

All laboratory & Blood Bank staff of Al-Qunfudah General Hospital.

06. Equipment & Forms

REVEOS automated blood processing machine

07. Attachment :

Attachment 1 MEMO FROM MOH FOR VOLUME COMPONENT PREPARATION

VOLUME	WEIGHT (Gms)	REMARKS
QNS	less than 413 gm(318 gmblood+95gm bags weight)	discard
Low volume	413:523gm(318:428 gm blood +95 gm bags weight)	PRBCs only
Ideal volume	524:620 gm(429:525 gm blood + 95 gm bags weight)	Separate to its component
Heavy unit	more than620 gm(525 gm blood + 95 gm bags weight)	discard

08. Reference

08.1. The Technical manual of the American Association of Blood Banks.

08.2. REVEOS technical manual

08.3. The unified Practical Procedure Manual for Blood Banks in The Arab Countries

Preparation , Reviewing & Approval Box

	NAME	POSITION	SIGN & STAMP	DATE
Reviewed By	Dr RAJA NACER SASSI	Head of Blood Bank		16/8/1440
Reviewed By	Dr. IBRAHIM AWADH	Lab &B.Bank HOD		16/8/1440
Document Reviewed By	Ms. SADIAH ALMAHMOUDI	TQM Director		18/8/1440
Reviewed By	Dr. AGEEL ALGANIMI	Medical Director		18/8/1440
Approved By	Dr. ABDULLAH ALJABRI	Hospital Director		18/8/1440

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